

Impact of Product/Service Characteristics on the Rate of Adoption of an Innovation: A case of Eco Cash mobile services in Chipinge District, Zimbabwe.

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Abstract: *The emergence of Eco Cash in Zimbabwe ushered a new dispensation in the banking services sector market, with the urbanites responding favorably. The range of mobile banking services offered include bank transfers (sending and receiving money), airtime top-ups, bill payments and bank to wallet and wallet to bank transfers. However this development was not welcome by the traditional banking businesses as they realized the imminent danger of competition, a move that prompted the brick and mortar banks to summon the central bank to force the new rival to undertake its services in conjunction with them. Despite showing great potential, the Eco Cash services have attracted limited attention in some rural market segments in the country and yet this innovation was aimed at bringing banking convenience to the rural folks. It is against this background that this research was carried out to establish the extent to which the characteristic nature (relative advantage, compatibility, complexity, trial-ability and observability) of the Eco Cash mobile services impacts on its rate of adoption and acceptance in the rural market. The study was conducted in Chipinge District at four selected business centers, namely Birchenough Bridge, Tanganda, Chibuwe and Rimbi and Checheche. A descriptive survey research design was employed and a sample size of 80 respondents comprising principally registered Econet Wireless subscribers was conveniently intercepted as they entered the townships. The major instrument used was a structured questionnaire and the results were analyzed using descriptive statistical tools namely the mean and standard. The results show that Eco Cash services are not popular in the rural market, despite them having better attributes that can hasten their rate of adoption by the target market. This therefore implies that Econet Wireless should make some deliberate targeted promotional programs aimed at the rural market and this may improve the adoption of eco cash service in Zimbabwe.*

Key Terms: *Product/Service, Eco-cash, Innovation, Service Characteristics, Rate of Adoption,*

I. Introduction

The emergence of the Eco Cash service in Zimbabwe ushered a new dispensation in the banking fraternity, with traditional banks panicking thereby colluding amongst themselves with a collective idea to persuade the Central bank to force mobile telecommunications firms to conduct all their mobile transfer services through them (News DZE Zimbabwe Report, 2013). Despite all those suppressive efforts, this development saw a radical transformation from the traditional banking services which were predominantly done in the brick and mortar and through human and automated teller machine transactions, to completely virtual transactions based on mobile phones. Thus with the traditional banking system clients and prospective consumers had to travel at times for longer distances in order to access the much needed services situated at various designated access points, mostly in urban areas and growth points around the country. Despite offering equally valuable services, the brick and mortar banking halls and ATMs have since seen their existence gradually facing imminent competition from the mobile money transfer services which are being offered by Econet Wireless, the country's leading telecommunications service provider, which boasts of a 75% and 69% country wide network coverage and subscriber base respectively. Realizing the need to offer convenience and to dispel the challenges from all the Econet Wireless clients and potential prospects dotted around the country, the organization entered the mobile banking service sector towards the end of year 2011, thereby decentralizing a larger chunk of the banking transaction services through the use of the formidable Eco Cash mobile service, an incredible service which allows current and potential customers access to a myriad of banking services some of which include airtime top-up, pay merchant, cash out, sending money, bill payment, wallet to bank and bank to wallet transfers, balance enquiry of the last three transactions and the ordinary balance check to mention but a few. These mobile money transfer services have brought a 24-hour service convenience to every client and potential service user regardless of an individual's geographic location. The cash out and money sending services are catalyzed via more than 3000 registered Eco-cash agents which are strategically dotted across the whole country (Zimbabwe Independent, 07 June 2013). This development has indeed brought both service and cost convenience to all people in different parts of the country, particularly the once underprivileged rural folks.

Despite all these benefits the permeation of this much needed service into the rural market fabric has been slow with very few people understanding and having adopted the use of Eco-cash services. Kotler and Armstrong(2006) contend that the ease with which a product or service innovation diffuses into the market is a function of its characteristic nature which is defined by (1) its relative advantage in use over other products, (2) its complexity, (3) its compatibility in use, (4) its ability to be tried and (5) its ability to be observed. It is against this setting that the research sought to find out how the characteristic nature of an innovation (Eco Cash) affects its rate of diffusion on the Econet Wireless rural market in Chipinge district of Manicaland in Zimbabwe.

II. Objectives Of The Study

- ❖ To assess the extent to which relative advantage attributes affect acceptance and use of Eco Cash by the rural market.
- ❖ To find out how compatible the Eco Cash service is with rural market cultural values.
- ❖ To determine the extent to which the Eco Cash service is complex in its use for rural market.
- ❖ To analyze the extent to which the observability attributes impact on the Eco Cash service's acceptance by rural market.
- ❖ To assess the extent to which the Eco Cash service can be used by rural market on a limited service and scale.

III. Literature Review

3.1 Product:

A product in a broader sense is “a collection of need satisfying utilities which is offered to a market so that the market can pay attention to it, buy it or consume it,” Marx Van der Walt (1998). In other words the term product is diverse as it does not refer only to physical objects but it includes such aspects as, personalities, places, institutions, services and ideas. Contemporary marketing writers like Kotler, & Armstrong (2006) and McCarthy (0000) share the same perspective in which a product /service can be anything designed to capture market attention for the purpose of acquisition and use in order to meet defined needs and wants. Such may not necessarily need to be in its physical form; hence the need to define a product /service on the basis of the core benefits sought. A product/service innovation must have several varieties to cater for the differences in customer needs and wants. Minor variations may be included to match the product/service to specific interests of different groups of consumers in different market segments. Echo Cash mobile service is targeted at both ultimate consumers as well as to industrial users and has specific services for merchants, payment of bills and many more. Even though this has come to make life easy for businesses and individuals, the rural folks in Chipinge have not eagerly grabbed the advantage of the new innovation.

3.2 Eco Cash

“EcoCash is an innovative mobile service payment solution that allows all Econet customers to complete simple financial transactions such as sending money to loved ones, buying prepaid airtime for themselves or for other Econet subscribers and paying for goods and services (such as Dstv ,water and electricity bills.)” <https://www.econet.co.zw/ecocash/>. This electronic mobile payment system is significantly supported by Econet's subscriber base which is currently estimated at eight million customers and is serviced by about 3000 registered Eco Cash agents dotted around the country (the Zimbabwe Independent, 2013). The success of Eco Cash in Zimbabwe has greatly been attributed to a widely distributed network which has afforded all customers to do their banking transactions in more than one place and for longer hours, but have such privileges been fully taken advantage of by the entire market, including the rural market which was initial the prime target segment for Eco Cash?

3.3 Innovation:

The adoption of new innovations has developed recently because of many developments in the field of technology in the world as a whole. Diffusion researches have examined the adoption of new products by individuals such as farmers, physicians, and consumers as researched by (Fliegel and Kivlin 1966; Menzel 1960; Ostlund 1974; Rogers 1995; Sultan, Farley, and Lehmann 1990) and determine that new product characteristics are defined by the individual adopter. Therefore adoption of innovation studies have given more information on how the characteristic nature of innovations impact on the rate of diffusion and the success of that innovation (Gatignon and Robertson 1985). Roger (1993) asserts that innovation characteristics have been analyzed and proposes that the new product's relative advantage, compatibility, trial-ability and observability are closely linked to the adoption of an innovation and that its complexity in nature has a negative impact to the rate of diffusion. Parker and Sarvary (1994) suggest that the characteristics outlined by Rogers (1993) are all hinged on one common factor so they are not independent but are interdependent. In addition, the concept of relative advantage proves to be an essential product characteristic in defining what adoption means (Weiss and Calantone 1994). The idea of an innovation's relative advantage is central to the way of new product

differentiation, which provides uniqueness to an innovation which must be better than the competitor's offering. (Porter 1980). It is important to know that the success of an innovation depends on the market where the firm operates.

The adoption process starts with a small group of imaginative, visionary innovators. They normally take a considerable time, energy and innovative skills on crafting new product ideas and technological gadgets and they also spread positive news about them as much as possible. Dewar and Dutton (1986) define radical innovations as "fundamental changes that represent revolutionary changes in technology. Incremental innovations are minor improvements or simple adjustments in current technology". Despite the fact that it is expensive to bring a new innovation on the market, studies by Hoffman et al (2005), Baker (1999), Kinnear (1995), Banyte and Salickaite (2008) have shown that on average 40% of the innovations do not make it on the market although this phenomenon is influenced by the new product/service's characteristics, competition, demand and other market forces. Rogers (1995) contends that there are five main characteristics of an innovation that explain its rate of adoption namely relative advantage, compatibility, complexity, trial-ability and observability. Some new products would be understood as having more relative advantage, more closely compatible, ease to try on a limited basis, more observable, and less complex, but this does not mean that their adoption will be fast. Frambach's (1998) study was based on explaining these innovation characteristic variables. Tornatzky and Klein (1982) also observed that relative advantage, compatibility, and complexity have consistently influenced the new product's adoption process and diffusion.

3.4 INNOVATION CHARACTERISTICS

3.4.1) Relative advantage

Relative Advantage is the consumer's view of an innovation as more superior as compared to the previous model of a similar product or services. The relative advantage may depend on it being an improved product with added features, attributes, benefits and form, or is sold at an attractive price with better buying terms, cash or quantity discounts, promotional terms, or more accessible to customers (proximity to store, or better communication.) Normally product-based advantages are more influential to the adoption of innovations than the other elements of the marketing strategy such as promotion price and place. The higher the relative advantage of the innovation, the better and high speed it diffuses into the market. (Kotler & Armstrong, 2006.) The users of the innovation perceive it as better than the previous idea it supersedes. The greater the perceived relative advantage of an innovation, such as (Echo Cash in Zimbabwe) the high speed of its adoption is likely to be. Normally adoption depends on the perceptions and needs of the market segment concerned. The uniqueness fact of the new product or service, and its need satisfying attributes and other benefits are important for it to be absorbed into the market faster.

3.4.2) Compatibility

Compatibility refer to the level of fitness between the newly produced product/service and the customer's wants or needs, standard expectations, their measures of value, and the individual experiences of the potential buyer. Generally, the compatibility of the new product /service has an impact which is positive on its adoption (Kotler & Armstrong, 2006). A product/service will be quick to diffuse in the market if consumers are to maintain their present values, norms, cultures and lifestyles. It has been argued that dynamically continuous innovations are higher on compatibility than those that are discontinuous in nature. An innovation is said to be compatible with customers' values, beliefs or practices if it can fit well to the variables noted above, and will be adopted quickly as a product that is compatible. The potential buyer of the innovation must be convinced that the new product is compatible with the customer's needs, beliefs, value and experiences. (Frambach et al, 1998). It is highlighted that both demand side and supply side determinants have the impact on the customer's ability to adopt new products/services or new processes. These two sides (demand side and supply side factors) cannot be addressed separately so compatibility is needed.

3.4.3) Complexity

Complexity is the relative ease or difficult with which a new product/service is perceived by a potential adopters in use or application (Rogers, 1983, Gupta and Rogers, 1991, Straub, 2009). While discussing the innovation complexity, technical complexity of a product/service acts as a barrier to positive diffusion in the market. Complexity may be because of many attributes (attributes complexity which are difficult to understand) and the other complexity may be trade off complexity. Mostly, potential customers resist trial and adoption of new products/services because of fear of complexity in purchase and usage. There are different forms of complexities, for example limited use of the new product or service, difficulties in comprehending a new product or service especially on the first encounter with the new innovation. Normally complexity builds a negative impact on the rate of the adoption of the innovation (Frambach & Schillewaert, 1999). To rural population in Chipinge, buying and registering a phone line is may be difficult, since one has to visit Econet

Shop and then follow a long procedure in enquiring balances, sending or receiving money require one to go through ten steps on maximum. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings. If the product is complex, the diffusion process becomes slower. It is important to mention here that the young generation has proved to be more techno savvy and have high acceptance of electronic products such as digital cameras, computer games, i-phones, i-pads, MP3s and MP4s, laptops, ATMs etc much quicker and faster than their older counterparts. This is due to their exposure to these technologies in the market than the older generation.

3.4.4) Trial-ability

Trial-ability entails the degree to which an innovation can be tested or experimented with on a limited scale before a potential user or consumer makes full adoption (Rogers, 1983; Gupta & Rogers, 1991; Straub, 2009). Divisibility is the level of trial of the innovation prior to its adoption so researches have shown that the trial-ability of any innovation is essential to the groups of innovators and early adopters as they influence the other groups of adopters. One of the specific groups of early adopters that catalyze the diffusion of innovation in Zimbabwe is the opinion leader who has power to influence others to try and adopt. (Forlani & Parthasarathy, (2003). Overtime, research has proved that opinion leaders have a positive influence on the customer decision-making process through the use of word of mouth. Above all they work as role models to be copied (Goldsmith & Witt, 2005; Dearing, 2009). In rural areas people like school teachers, civil servants, chiefs and political leaders can work as early adopters and innovators. After the innovators and early adopters have tried the product the late majority would learn the usefulness and benefits of the innovation (Echo Cash services) from the early adopters. This is because the prospects get an opportunity to try the product/service, assess it and decide to accept or reject it. Trial-ability can be achieved if the provider of an innovation provides free samples, or smaller packs and smaller than-average sizes, and for services can make use of low prices for services, or provide a period of demonstrations and test-runs. This would be useful to create confidence in the use of the innovation and reduce risk of loss and failure. Trial-ability has proved to have a positive impact on the acceptability and adoption of an innovation (Tornatzky & Klein, 1982). The extent to which an innovation can be used on a limited basis dispels doubts and provides confidence to the target customer who is intends to use it.

3.4.5) Observability

This refers to the easier it is for consumers or potential customers to examine and see the outcomes of using a new innovation. The visible aspects of the innovation will reduce uncertainty and also motivate discussion about the new idea, as peers, neighbours and close friends of those who are adopters will often ask for more information about Echo Cash services. Observability can be defined as 'the extent of communicating, explicating and relating the results of the innovation,' (Roger 1995). It is the visibility of how an innovation can easily be adopted in the day to day business dealings and on home application as seen by the potential consumers. The fact that a customer is able to see the increase in his wallet balance after receiving money through Echo Cash must make it easy to be adopted. Again a customer who receives an airtime top up is able to observe the effect of getting a top up from someone very far, like a son sending air time top-up to parents in Chipinge. Clearly observability of the outcomes of the new products can enhance the speed of diffusion of the innovation in the targeted market as well as in the social system (Tornatzky & Klein, 1982). These five important characteristics of innovation adoption make a valuable measuring checklist to craft discussion platforms for focus group, and also work as guides for new product evaluations. They also help examine areas of weaknesses so this becomes focal points to be addressed as ways to improve products or behaviors in line with the innovation. Henrichs (1995) pointed out that observability and relative advantages were related to each other when looking at the early adoption of the technology. Each and every variable of the adoption of innovation cannot be effective in isolation they have to be looked at holistically than as independents. Therefore an innovation must be compatible to customers' values, less complex for easy understanding, easy to try and observable and have relative advantage.

IV. Rate Of Adoption

Diffusion of innovation is a concept which shows how, why and at what rate new ideas, products, services and technology permeate into aggregate market overtime. Rogers (1962) contends that diffusion entails an inanimate process by which new products/services infiltrate through certain social networks in a social system. The rate at which diffusion occurs is the so called rate of adoption of an innovation and it measures the speed with which an innovation increasingly get absorbed by the market tiers and is influenced by the interplay of the following variables namely the attributes of the innovation (relative advantage, compatibility, complexity, observability and trial-ability), available communication channels, time, the promotional efforts of adoption agents and market characteristics (measured in socio-economic terms).

V. Methodology

The researchers implemented a descriptive survey research design with the aim of soliciting for data about the effect that the characteristic nature of an innovation (measured in terms of its relative advantage, compatibility, complexity, trial-ability and observability) has on its rate of permeation into the market fabric. The design enabled the researchers a chance to assess the degree to which the Eco Cash service characteristics have impacted on its acceptance and ultimate adoption by the rural folks. The research subjects comprised all the registered Econet Wireless customers in the district. The sample elements were drawn from five business centers around the district namely Chibuwe, Checheche, Berchnough Bridge, Tanganda and Rimbi. A non-probability sampling technique in the form of convenience sampling was adopted in which intercepts were made to individuals as they were walking about the business centers. Screening was done on the basis of one being an Econet Wireless service user as these were the potential users of the Eco Cash service. A total of 80 respondents which comprised 16 respondents from each business center in the district were surveyed. Data gathering was done using face to face interviews. A structured interview guide was used to gather data from the conveniently selected respondents, an aspect that allowed researchers consistency in the data gathering from the respondents (Malhotra and Birks 2004). A five point likert scale was adopted, with strongly agree having a weighting of 1 and strongly disagree having a weighting of 5. The interview guide was pre-tested on 8 randomly selected respondents (representing 10%) from Checheche business center. Necessary adjustments were made to the guide and then it was subsequently administered. SPSS version 14.0 was used to analyze data using simple descriptive statistical tools namely the mean and standard deviation.

VI. Findings

Relative advantage

Table 6.1: Responses on Relative Advantage variables

	N	Minimum	Maximum	Mean	Std Deviation
Better features	80	1	5	4.01	1.164
Better deals are given	80	1	5	3.99	1.206
Low cost and convenient	80	1	5	3.70	1.316

Respondents were asked to indicate the extent to which they agreed or disagreed on 3 relative advantage variables namely better features, better deals and low cost and overall mean responses were 4,01; 3,99 and 3,7 respectively. There is a reflection that overall respondents disagree that Eco Cash has relative advantage. This is supported by a small standard deviation value which is indicative of the fact that the deviations from the average responses are minimal. These results may be of this nature simply because respondents in this market segment rarely use the service and that they are sometimes slow to embrace innovations hence have limited knowledge about the service' better features, better deals and convenience over traditional banking services.

Compatibility

Table 6.2: Responses on compatibility variables

	N	Minimum	Maximum	Mean	Std Deviation
Matches lifestyles	80	1	5	4.09	1.034
Suits social norms	80	1	5	3.44	1.261
Fits well in cultural nuances	80	1	5	3.56	1.157

Overall responses fell in the mean range of 3,44 to 4,99 for the three compatibility variables namely i) matches lifestyles; ii) suits social values and iii) fits cultural nuances. These results reflect that generally respondents indicated that they either don't know or disagree that indeed the Eco Cash service is compatible with the overall cultural framework of the rural people in Chipinge district. A reflection of such results may also show that respondents may not know the relationship between their norms and values and the effect that the innovation has on them. It may also be a question of lack of knowledge about the Eco Cash service as the rural market is pre-dominantly made up of individuals who can adopt an innovation only after the bulk of the market will have done so. The other reason may be due to the fact that an innovation may slowly take time to permeate into the rural market fabric because of limited medium vehicles and frequency of use of the service. Most of the service options offered are rarely relevant to this market segment for example payment of bills, e-banking and pay merchant.

Complexity

Table 6.3 Responses on complexity variables

	N	Minimum	Maximum	Mean	Std. Deviation
Easy to understand	80	1	5	3.80	1.257
Steps easy to execute	80	1	5	3.75	1.298
Longer process	80	1	5	3.20	1.513

The respondents have shown that they disagree that eco-cash is easy to understand and that its execution steps are simpler to follow. This is reflected in the table by the mean values of 3, 8 and 3, 25 for the two complexity variables which are closer to the mean values of 4. Respondents have also shown that they don't know if at all the process of accessing an Eco Cash service is longer. This may show that respondents in this district may not be frequent users of this service and hence may not have adequate knowledge in this regard. The deviations from the mean are minor as reflected by a value of 1 for the three variables a sign that generally this market has the same understanding of the Eco Cash service in relation to complexity. Some respondents indicated that the Eco Cash system quickly block them when processing their transactions, hence they need it to be slower. Some however were indicating that there are too many demands to select on the Eco Cash execution process which one has to complete in a stipulated limited time or one has to start afresh again and again until one beats the system programmed time.

Observability

Table 6. 4: Responses on Observability variables

	N	Minimum	Maximum	Mean	Std Deviation
Seen benefits	80	1	5	4.11	1.158
Benefits imaginable	80	1	5	3.59	1.087
Benefits perceivable	80	1	5	3.83	.991

The intangibility nature of service innovations have always challenges for any market, hence the respondents indicated that they did not agree that Eco Cash service benefits are very viable as shown in the table above by mean values of 4,11; 3,59 ;and 3,83 respectively for the observability variables. The deviations of the overall responses from the mean are small showing yet another pattern of responses under that variable. Lack of knowledge for this market could be sole reason for this pattern of results which seem to take a common shape. The rural market still has confidence in the brick and mortar buildings in which everything is seen by naked eyes from the time a person enters a banking hall for the processing of a variety of services ranging from withdrawals, deposits as well as transfers and bill payments until such a time the individual leaves the building.

Trial-ability;

Table 6.5: Responses on Trial-ability variables

	N	Minimum	Maximum	Mean	Std. Deviation
High degree of trial ability	80	1	5	3.40	1.208
Service can be test run	80	1	5	3.35	1.020
Can be tested on small scale	80	1	5	3.34	1.252

The respondents in this market segment have shown that indeed they do not know what the trial-ability attribute of service innovation is all about. All their responses fell in the "don't know" category as shown in the table above by mean response values in the lower 3 category. This trial-ability of a service is made simpler and appreciable if at all the services can be augmented by physical and or tangible cues especially to the rural markets that are highly skeptical and hesitant to embrace change.

VII. Managerial Implications

While indications are that innovations can be easily adopted by the young, venturesome segments of the market, it is also evident that the rural market despite having these young individuals in their midst they still may take their time to embrace and adopt innovations. Having carried out a survey in their segment of the market the impression is that the characteristic nature of an innovation may impact positively (by hastening) or negatively (by slowing) on the rate at which the market may use or adopt an innovation. With the Eco Cash service the indications are that the service characteristics namely relative advantage, compatibility, complexity, observability and trial-ability are such that the service can be easily absorbed in any market segment as has been proved by wide spread acceptance of this service in the urban markets (an aspect that raised alarm for protection

by the banking fraternity through the Central bank (News Dze Zimbabwe Report, 2013). In this regard the service provider needs to engage in aggressive promotional and marketing strategies in order to capture the attention of the entire rural market in full. If the market is targeted with tailor-made promotional strategies with extensive market coverage this innovation will outgrow its anticipated level of success as it has bridged the long existed service gap in the banking service sector which was traditionally market selective.

VIII. Further Research

This research was carried out on a limited scale and covered a mere district. Now for a new service which has had a national coverage it would make more sense if a more comprehensive research would be undertaken in future which will paint a holistic picture of the service in this regard.

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